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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/584,955

06/30/2006

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08/13/2008

EXAMINER

POWERS, FIONA

ART UNIT

PAPER NUMBER

1626

MAIL DATE

DELIVERY MODE

08/13/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/584,955	<b>Applicant(s)</b> GOETTEL ET AL.	
	<b>Examiner</b> Fiona T. Powers	<b>Art Unit</b> 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 10 is/are rejected.
- 7) ☒ Claim(s) 6-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/30/06</u> . | 6) <input type="checkbox"/> Other: ____.  |

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Receipt is acknowledged of the preliminary amendment and information disclosure statement filed June 30, 2006, which have been entered in the file.

Claims 1 to 3 and 5 are objected to because of the following informalities: in claim 1, page 2 of claims, line 8, in the definition of R4 to R6, "wherein" should be changed to -or- and "ro" should be changed to -to-. In claim 2, page 3 of claims, line 9, in the definition of Q<sup>+</sup>, "hy-droxyethyl" should be changed to -hydroxyethyl-. In claim 3, line 3, "trime-thylethanaminium" should be -trimethylethanaminium- and in line 12, "ami-no" should be -amino-. In claim 5, line 2, "for-mula" should be -formula-. Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Gmaj et al. (Chemical Abstracts, 71:22903, 1969), cited.

The reference discloses the claimed cationic naphthyl diazo dye of the formula (I) wherein R1, R2 and R3 are hydrogen; G is

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a methine group; Y is oxygen; L is C<sub>2</sub> alkylene bridging group; Q<sup>+</sup> is a cationic group of the formula (II) wherein R<sub>4</sub> to R<sub>6</sub> are each methyl; and X<sup>-</sup> is a benzenesulfate anion. Note the abstract and Registry Number 23472-92-6.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

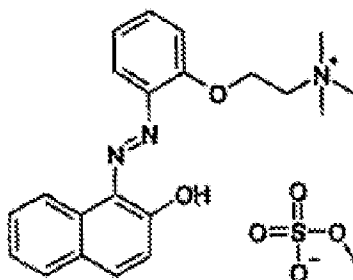
Claims 1 to 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gmaj et al. (Chemical Abstracts, 71:22903, 1969).

Determination of the scope and content of the prior art (MPEP §2141.01)

The reference discloses a structurally similar cationic naphthyldiazo dye which is useful for the dyeing of polyacrylonitrile fibers. The dye of the reference is structurally similar to the claimed dyes of the formula (I) wherein R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are hydrogen; G is a methine group; Y is oxygen; L is C<sub>2</sub> alkylene bridging group; Q<sup>+</sup> is a cationic group of the formula (II) wherein R<sub>4</sub> to R<sub>6</sub> are each (C<sub>1</sub>-C<sub>3</sub>)-alkyl group; and X<sup>-</sup> is an anion, for example methylsulfate anion. This

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dye corresponds to the first dye listed in claim 3 which is of the following formula:



**2-{2-[(2-hydroxy-1-naphthyl)diazenyl]phenoxy}-N,N,N-trimethylethanaminium methylsulfate (1)**

Note the abstract and Registry Number 23472-92-6.

*Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)*

The dye of the reference differs from that claimed only in that the anion is benzenesulfonate instead of methylsulfate anion or in that it is a homolog of the claimed dye (e.g. the group that corresponds to L is an ethylene group instead of a propylene group).

*Finding of prima facie obviousness---rational and motivation (MPEP §2142-2413)*

It would have been obvious to one of ordinary skill in the art to substitute a methylsulfate anion for the benzenesulfonate anion of the reference dye since the reference discloses similar dyes having the methylsulfate anion. Note the abstract.

It has been held that homologs are obvious over one another. See *In re Henze*, 85 USPQ 261, 263 (C.C.P.A 1950). Thus, it would also have been obvious to one of ordinary skill in the art to make the claimed dyes which are homologs of the reference dye.

One of ordinary skill in the art would have been motivated to make the claimed dyes with the expectation that additional dyes useful for dyeing polyacrylonitrile would be obtained.

Claims 6 to 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The references made of record and not relied upon show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fiona T. Powers whose telephone number is 571-272-0702. The examiner can normally be reached on Monday - Friday 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane can be reached on 571-272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Fiona T. Powers/  
Primary Examiner, Art Unit 1626

Fiona T. Powers  
Primary Examiner  
Art Unit 1626

ftp  
August 11, 2008